

## Endocrinology Questions

- Hypopituitarism in adults leads to all of the following EXCEPT
  - Failure to produce sex steroids and gametes
  - Hypogonadism and infertility
  - Loss of secondary sex characteristics in the male
  - Amenorrhea in the female
  - Inability to regulate glucose
- Adrenal crisis is precipitated by all the following EXCEPT
  - Prolonged suppressive glucocorticoid therapy without proper coverage in periods of recovery of the pituitary – adrenal axis
  - Acute illness without recognition of the lack of cortisol
  - Pituitary apoplexy
  - Growth hormone replacement in a patient with unrecognized ACTH deficiency
  - Head injury
- Which of the following anatomical parts of the adrenal gland produce aldosterone
  - Zona Fasciculata
  - Zona Reticularis
  - Zona Glomerulosa
  - All of the above
  - None of the above
- Concerning the adrenal gland negative feedback loop, identify the true statement
  - Cortisol promotes release but not the synthesis of ACTH
  - Cortisol stimulates synthesis and release of the CRH
  - CRH stimulates release of ACTH
  - AVP and CRH stimulate release of ACTH
  - All of the above are true
- In primary failure of the adrenal gland, the etiology can be
  - infiltrative destruction of the gland itself
  - Pituitary apoplexy
  - Meningococemia.
  - Cortisol level is low
  - ACTH levels are high
- Which of the following has NOT been associated with primary gland failure
  - AIDS
  - Metastatic malignancy
  - Mutation of the ACTH gene
  - Pituitary/hypothalamic radiation
  - None of the above
- In secondary adrenal gland failure:
  - There is no hyperpigmentation
  - ACTH levels are low
  - CRH levels are low
  - Aldosterone is still produced
  - All of the above are true
- Secondary adrenal gland failure can be due to all of the following EXCEPT
  - Pituitary tumors
  - Hypothalamic disease
  - Irradiation of the hypothalamus
  - Head injury
  - Diabetes
- In tertiary adrenal gland failure
  - ACTH release from the pituitary gland will be suppressed by exogenous cortisol
  - ACTH release occurs but lacks a diurnal rhythm
  - CRH levels are high
  - Cortisol levels are high
  - Aldosterone levels are high
- Clinical signs of adrenal gland failure are
  - Hypernatremia
  - Hyperglycemia
  - Low calcium
  - Lymphocytosis
  - Constipation

11. Primary adrenal gland deficiency clinically results in all of the following EXCEPT

- a. Inability to tan
- b. Increased libido in the female
- c. Abdominal striae
- d. Oral mucosa hyperpigmentation
- e. Low blood pressure

12. Meningococemia can result in

- a. Paradoxical regeneration of the adrenal gland after surgical removal
- b. Waterhouse Frederichson syndrome
- c. Resistance to ACTH stimulation of the zona glomerulosa
- d. Direct sensitization of CRH to the zona fasciculata
- e. Increased cortisol feedback to the pituitary gland to block cortisol release.

13. Management of adrenal crisis includes all of the following EXCEPT

- a. IV access
- b. Chem 7
- c. Measurement of CRH levels
- d. ACTH test
- e. Measurement of cortisol level

14. Cushing syndrome is caused by all of the above EXCEPT

- a. Excessive levels of cortisol
- b. Pituitary adenoma
- c. Deficiency in ACTH
- d. Increase in CRH
- e. All of the above

15. Clinical features of Cushing syndrome include all of the following EXCEPT

- a. Weight loss
- b. Violaceous cutaneous striae
- c. Thin skin
- d. Buffalo hump
- e. Moon face

16. Clinical features of Cushing syndrome include all of the following EXCEPT

- a. Thick skin
- b. Muscle weakness
- c. Hirsutism
- d. Clitoris hypertrophy
- e. Striae distensae

17. Clinical signs of Cushing's disease include all of the following EXCEPT

- a. Moon face
- b. Absence of thirst
- c. Normal menstrual periods
- d. Personality changes
- e. Fatigability / Weakness

18. Orthopedic problems in Cushing Disease include

- a. Osteoporosis
- b. Vertebral Collapse
- c. Both of the above
- d. None of the above

19. The definitive test in the diagnosis of Cushing disease is

- a. 1 mg Dexamethasone suppression test
- b. Serum cortisol test
- c. 2 mg Dexamethasone suppression test
- d. Measurement of CRH levels
- e. None of the above

20. In Cushing disease secondary to an adrenal tumor

- a. ACTH levels are normal
- b. ACTH levels are high
- c. Cortisol levels are low
- d. CRH levels are low
- e. None of the above

21. Cushing disease treated with surgical adrenalectomy secondary to pituitary tumor has the following characteristics

- a. ACTH levels are high
- b. Patients require lifelong replacement of both glucocorticoids and mineralocorticoids
- c. ACTH levels are low
- d. Both of the above
- e. None of the above

22. Nelson syndrome features all of the following EXCEPT
- Excess of cortisol levels
  - Increased alpha-MSH.
  - Increased CRH levels
  - Increased ACTH levels
  - Tongue is normal
23. Hypoaldosteronism
- May be independent of cortisol deficiency
  - Renin levels may be low
  - May occur after heparin administration
  - May present with postural hypotension
  - All of the above
24. Concerning hypoaldosteronism
- Cortisol is the treatment of choice
  - Conn syndrome may result from over treatment of hypoaldosteronism
  - Results from an increase in angiotensin I conversion to angiotensin II
  - Is precipitated by pituitary apoplexy
  - Fludrocortisone 0.10 mg is an effective medical treatment
25. Which of the following may be a sign of primary hyperaldosteronism
- Diastolic hypertension without edema
  - Hypokalemia
  - Polyuria
  - Metabolic acidosis
  - All of the above
26. Secondary aldosteronism can be due to
- Renal artery stenosis
  - Malignant hypertension
  - Heparin administration
  - Radiation as the definitive therapy
  - None of the above
27. Treatment for bilateral adrenal hyperplasia includes
- Absence of salt restriction as a mode of therapy
  - Surgery to correct the underlying defect
  - Spironolactone
  - None of the above
  - All of the above
28. Pheochromocytoma
- Results in the feeling of impending doom
  - Presents with painful extremities
  - Causes frequent diarrhea
  - Is often associated with obesity
  - Presents with hypotension
29. Paroxysmal symptoms of a pheochromocytoma include
- Hypotension
  - Ulcers on the pretibial surface of both legs
  - Respiratory failure
  - Acute exacerbations of pain in the great toe
  - Sweating
30. Which of the following is associated with pheochromocytoma
- Thyroid medullary cancer
  - Astrocytoma
  - Glioblastoma
  - Liver failure
  - Spontaneous fractures of the base of the 5<sup>th</sup> metatarsal bone
31. Concerning the treatment of a pheochromocytoma:
- Surgery is a treatment of choice
  - Radiation therapy is contraindicated
  - Alpha adrenergic blockers are often deleterious
  - Beta blockers are contraindicated
  - Salt restriction is imperative

32. Systemic manifestation of MEN II syndrome which includes a pheochromocytoma are
- Lichen amyloidosis
  - Weight gain
  - Bradycardia
  - Decreased urine output
  - Increased appetite
33. The diagnosis of diabetes can be made with which of the following
- A fasting blood glucose of 125
  - Random sugar of > 200 with symptoms of diabetes
  - A 2hr blood glucose of > 180 during an oral GTT
  - Ketones in urine
  -
34. Concerning diabetes
- Insulin is released from the alpha cells in the liver
  - Insulin is synthesized in the beta cells of the pancreas
  - C peptide is made in a ratio of 1: 2 to the insulin molecule
  - Insulin is active immediately upon release without any further enzymatic action needed for it to become metabolically active.
  - Retinal detachment occurs early in the disease process.
35. In diabetic ketoacidosis, the most important initial therapy (after the ABCs) is :
- Insulin
  - Potassium
  - Fluids
  - Magnesium
  - Bicarbonate
36. Glucose should be administered to a patient in DKA when the glucose levels approaches
- 50
  - 100
  - 150
  - 250
  - 400
37. Insulin should be administered in a patient with DKA
- As long as the patient is ketotic
  - Only until the glucose falls below 200
  - Until the patient is transferred from the ER to the ICU
  - As long as the patient is hypokalemic
  - Until the patient is euglycemic
38. Which of the following hormones opposes insulin action
- Growth hormone
  - Epinephrine
  - Cortisol
  - Glucagon
  - All of the above
39. Diabetic ketoacidosis is associated with
- Decreased gluconeogenesis
  - Increased glycogenolysis
  - Ketone formation
  - No change in insulin levels
  - Hyponatremia
40. Symptoms of diabetic ketoacidosis include all of the following EXCEPT
- Polyuria
  - Shortness of breath
  - Well hydrated mucosa
  - Kussmaul respirations
  - Altered mental status
41. Precipitating events of diabetic ketoacidosis are
- Hypoglycemia
  - Infection
  - Medical compliance
  - Low HBA1c levels
  - Well controlled diabetes
42. Laboratory findings in diabetic ketoacidosis include
- Low glucose levels
  - Absence of ketones in the urine
  - Hypermagnesemia
  - Hyperphosphatemia
  - Acidosis

43. Diabetic ketoacidosis gives a strongly positive nitroprusside test due to
- Acetoacetate
  - Beta hydroxybutyric acid formation
  - Acetone
  - Glucose
  - Insulin
44. The nitroprusside test becomes more positive as you are (correctly) treating the patient with DKA. This is because
- total ketone bodies increase as effective therapy is initiated
  - Beta hydroxybutyric acid (negative on nitroprusside test) is converted to acetoacetate which (positive on nitroprusside test).
  - Acetone formed as the final oxidation product is strongly reactive with nitroprusside
  - A fourth yet unknown ketone body is produced which give a positive nitroprusside test
  - Insulin which is given to the patient in DKA is strongly reactive with nitroprusside.
45. Bicarbonate is not given routinely to a patient with DKA because
- Cerebral edema occurs commonly
  - The patient will produce their own bicarbonate as they are given insulin and fluids
  - There is decreased tissue oxygenation as the HbO<sub>2</sub> curve shifts to the left
  - It promotes hyperkalemia
  - It increases CSF pH
46. A patient who develops a nonketotic hyperglycemic state (coma) will have
- A low glucose level
  - Severe ketoacidosis
  - Hyposmolality
  - Pre-renal azotemia
  - Arterial pH less than 7.00
47. The most important treatment for NKHC (non ketotic hyperosmolar state/coma) is:
- Fluids
  - Insulin
  - Potassium
  - Magnesium
  - Bicarbonate
48. Which of the following infections in chronic diabetes results in malignant external otitis?
- Escherichia coli
  - Pseudomonas aeruginosa
  - Mycoplasma pneumoniae
  - Hemophilus Influenzae
  - Enterococcus
49. Which of the following is a significant complication in diabetics
- Rhinocerebral mucormycosis
  - Clostridium difficile colitis
  - Osteomyelitis
  - Optic neuritis
  - Endophthalmitis
50. In thyroid regulation
- TRH is synthesized by the pituitary
  - TSH is synthesized by the hypothalamus
  - Thyroid hormone inhibits release of TSH but not TRH
  - T4 is less potent than T3
  - TSH stimulates TRH release
51. Comparing T4 vs T3
- T3 is bound to prealbumin
  - The half life of T3 is longer than T4
  - T3 binds less to the receptor than does T4
  - T4 is more potent than T3
  - T3 is formed by peripheral conversion of T4 to T3
52. Symptoms of hypothyroidism include
- Hoarse voice
  - Cold intolerance
  - Constipation
  - Amenorrhea
  - All of the above

53. Signs of hypothyroidism include
- Puffy face / hands and feet
  - Delayed DTR
  - Carpal tunnel syndrome
  - Alopecia
  - All of the above
54. Treatment of hypothyroidism
- May unmask adrenal insufficiency
  - Is associated with pseudotumor cerebri in children
  - May need to be increased in pregnancy
  - Includes daily doses of levothyroxine
  - All of the above
55. Hyperthyroidism symptoms include
- Irritability
  - Cold intolerance
  - Increased appetite
  - Constipation
  - Bradycardia
56. Hyperthyroidism signs include
- Weight gain
  - Cold skin
  - Normal menstrual periods
  - Increased perspiration
  - Slow heart rate
57. Physical signs of hyperthyroidism include which of the following
- Pretibial myxedema
  - Puffy face
  - Increased nail growth
  - Yellow teeth
  - Hyperpigmentation on the oral mucosa
58. Precipitating events of thyroid storm include
- Infection
  - CVA
  - DKA
  - Emotional stress
  - All of the above
59. Treatment of thyroid storm includes
- Propylthiouracil
  - Potassium iodide
  - Propranolol
  - Dexamethasone
  - All of the above
60. All of the following are symptoms of thyroid eye disease
- Diplopia
  - Proptosis
  - Lid lag /retraction
  - Conjunctival injection / chemosis
  - All of the above are true

## Endocrinology Answers

1. e
2. d
3. c
4. c
5. a (c can also be correct)
6. d
7. e
8. e
9. a
10. d
11. a, b, & c
12. b
13. c
14. c
15. a
16. a
17. c
18. c
19. c
20. d
21. a & b
22. a
23. e
24. e
25. a, b, & c
26. a
27. b
28. a
29. e
30. a
31. a
32. a
33. b
34. b
35. c
36. d
37. a
38. e
39. c
40. c
41. b
42. e
43. a
44. b
45. c
46. d
47. a
48. b
49. a
50. d
51. e
52. e
53. e
54. e
55. a & c
56. d
57. a
58. e
59. e
60. e